Unite
Depar
Agric

orest
ervice

Beaverhead
National
Forest

Madison Ranger District
5 Forest Service Road
Ennis, MT 59729
(406)682-4253

Sheridan Work Center
P.O. Box 428
Sheridan, MT 59749
(406)842-5432

S
388.1
U8BHeawc
1994

Reply to: 1950/5460

Date: September 2, 1994

Montana State Library
Documents Section
1515 East Sixth Avenue
Helena, MT 59620

Dear Librarian:

Enclosed you will find your review copy of the Willow Creek Access Environmental Assessment. The document describes the existing conditions found within the analysis area, along with the three alternatives analyzed. Based on the analysis presented in the EA, I am considering choosing Alternative 3 for implementation. You are invited to comment on this analysis.

This copy is being sent to you prior to the printing of the legal notice of availability for review. It is anticipated the legal notice will be published September 6, 1994. To ensure consideration in my decision, comments must be postmarked or received by October 7, 1994. Please address your comments to Diane Petroni at the Madison Ranger District. Your comments should include: (1) name, address, telephone number, organization represented, if any; (2) title of the document on which the comment is being submitted; and (3) specific facts and supporting reasons for me to consider. Copies of the Decision Notice will be mailed to those people who have submitted comments either before or during the comment period, and to those who request a copy.

If you have any other questions please contact Diane Petroni at the Madison Ranger District Office, phone (406)682-4253.

Sincerely,

Vonna Mae Mize
for MARK A. PETRONI
District Ranger

enclosure

STATE DOCUMENTS COLLECTION

FEB 0 1995

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

PLEASE RETURN

MAY 6 - 1969

ENVIRONMENTAL ASSESSMENT

Willow Creek Access

Beaverhead National Forest
Bureau of Land Management
Montana Department of State Lands

Madison County, Montana

Abstract: The Forest Service will obtain right-of-way easements to provide public access to the Beaverhead National Forest boundary at Willow Creek, the North Fork Greenhorn Creek, and the South Fork Greenhorn Creek. This document analyzes the environmental effects of road construction and travel on the proposed route and two alternative routes.

The Forest Service prefers Alternative 3 - Bowman Bypass.

Approved by:____________________________________ Date:____________________
Department of State Lands

Approved by:____________________________________ Date:____________________
Bureau of Land Management
Area Manager

Approved by:____________________________________ Date:____________________
Beaverhead National Forest
Madison District Ranger

TABLE OF CONTENTS

I. PURPOSE AND NEED

A. PROPOSED ACTION 3

B. PURPOSE AND NEED 3

C. SCOPE OF THE PROPOSED ACTION 3

II. ISSUES AND ALTERNATIVES

A. ISSUES 5

B. ALTERNATIVES 6

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION 15

B. MANAGEMENT DIRECTION 15

C. HYDROLOGY 16

D. HERITAGE RESOURCES 21

E. RECREATION 23

F. WILDLIFE 25

G. VISUALS 30

H. FISHERIES 30

I. SENSITIVE PLANTS 32

J. PUBLIC SAFETY 33

K. ROADLESS 34

L. NOXIOUS WEEDS 34

IV. LITERATURE CITED 35

I. PURPOSE AND NEED

A. PROPOSED ACTION

The Madison District of the Beaverhead National Forest proposes to obtain right-of-way easements, construct 1.5 miles of road, and reconstruct 0.3 miles of road to provide public access to the national forest in the Greenhorn Mountains. The proposal is presented in detail under "Alternative Descriptions" and on the Alternative 2 map.

B. PURPOSE AND NEED

To provide public and administrative access to national forest land in the North and South Fork Greenhorn drainages and the Willow Creek drainage.

To fulfill our portion of the Statement of Intent, explained more fully under "Public Involvement."

To fulfill our portion of the Memorandum of Understanding. This is a cooperative project with the Bureau of Land Management (BLM). A Memorandum of Understanding between the Forest Service and BLM was signed to coordinate the survey and design of the new access.

To eliminate mixed traffic on the bonded road to the talc mine and improve public safety.

To reduce erosion on the steep portion of the road from Willow Creek road to the south fork Greenhorn road; the boggy portion of the south fork road; and at the creek fords.

To implement the 1986 Beaverhead Forest Plan and the 1993 Gravelly/Snowcrest Transportation Plan.

C. SCOPE OF THE PROPOSED ACTION

1. Geographic

The project area is on private, State of Montana, and Bureau of Land Management lands adjacent to Beaverhead National Forest lands in the Greenhorn Mountains. The area lies approximately 14 miles south of Alder, Montana in T8S, R4W, as displayed on the attached vicinity map.

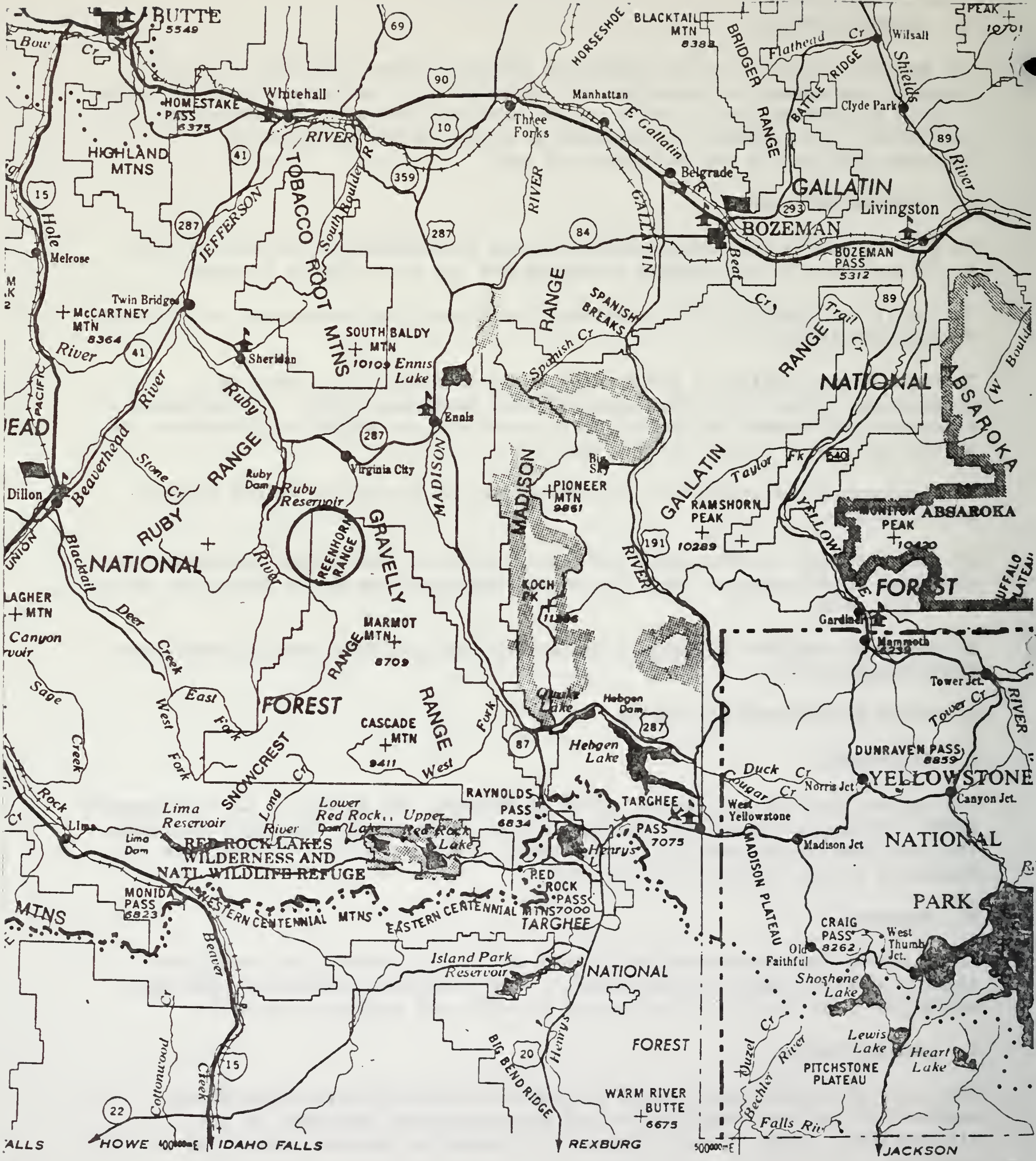
2. Temporal

Right-of-way easements would be pursued as soon as possible following the signing of a decision on this proposal. Any road construction decided upon would likely be started in the summer of 1995, and completed by fall.

3. Administrative

The scope of the proposed action is limited to the specific right-of-way acquisition and road construction and reconstruction described in the alternatives. There are no connected or cumulative actions considered in this analysis.

This is not a general management plan for the area. This analysis is the final site-specific NEPA documentation for the proposal.



WILLOW CREEK ACCESS EA

Vicinity Map

Project Area ○

-N-

II. ISSUES AND ALTERNATIVES

A. ISSUES

1. Internal Scoping

The project has been reviewed by Forest Service interdisciplinary (ID) teams twice. Most of the specialists involved were on both teams. Both reviews involved examining the proposals on the ground as well as becoming familiar with project records.

Providing access to the national forest was the team's primary concern. They also raised concerns about public safety on the mine road and cut-across road from the mine road to the South Fork Greenhorn road.

Upon field examination, specialists identified probable impacts to two resources - hydrology and heritage resources. These concerns were elevated into key issues for the analysis.

Resources which needed further study were recreation, wildlife, visuals, fisheries, and sensitive plants.

2. Public Involvement

Public access up Greenhorn Creek came into question in 1989 when the owner of the Snowcrest Ranch closed the road through his property. Negotiations resulted in a Statement of Intent, signed September 13, 1990 by the Bureau of Land Management, William R. Endy et al, Montana Department of State Lands, Snowcrest Ranch, Southern Talc Company, Ruby Valley Sportsmen, Public Lands Access Association, Inc. and the Beaverhead National Forest. The statement documents each signator's role in gaining access to the national forest via the Willow Creek Road, as described by the proposed action.

Initial scoping for the proposed action began with a news release July 11, 1991. Through that effort, one letter was received. The commenter was against building any new road, and concerned with the effects of increased traffic on the valleys of the Greenhorn drainages. One suggestion received apart from the scoping response was to provide vehicle access up Willow Creek and the mine road to the saddle on BLM and state land in section 25, then require non-motorized use from there.

The project was then stalled while the Snowcrest Ranch changed owners. A letter from Turner Enterprises, Inc. was received September 29, 1993, stating that as successors-in-interest to the Snowcrest Ranch, they agree to abide by the Statement of Intent. The mine also changed owners, and the new company's representative verbally agreed to abide by the statement of intent.

In October 1993, the project first appeared on the "Beaverhead National Forest Quarterly Project List." This list is sent out four times a year, to several hundred people on the forest mailing list, to keep them informed of projects proposed on the forest. The listing appeared again on January's, May's, and July's lists in 1994.

Due to the three year delay, we released a second news article in May of 1994. An article appeared May 19, 1994 in the Madisonian newspaper, asking for comments on the proposed action. A similar article appeared in the Bozeman Daily Chronicle and in the Advertiser from Dillon May 25, 1994. In addition, the Madison District mailed letters to 36 groups and individuals. Letters went to nearby landowners, environmental groups, and people involved in this and other access issues.

The second comment period ran through June 15, 1994. We received one letter, from Turner Enterprises. They presented an alternative road location near the "Bowman Place" and were concerned about unauthorized travel on their land and the effects of increased access on the environment.

3. Environmental Issues

Combining internal scoping and public involvement, the IDT developed the following key issues. Other concerns are answered within the individual resource reports.

1. How will the proposed action and its alternatives affect sediment delivery and hydrologic function of the North and South Forks of Greenhorn Creek?

The measurement index is the WATSED model prediction of percent over natural sediment, with the Forest Plan standards as the determining factor of significance.

2. How will the proposed action and its alternatives affect heritage resources?

The measurement indices are: 1) whether or not prehistoric "camp" sites are eligible for inclusion in the National Register of Historic Places, and; 2) how the alternatives will affect the sites, regardless of their eligibility.

B. ALTERNATIVES

1. Development of Alternatives

The proposed action resulted from negotiations with the people who signed the Statement of Intent. It was one proposed solution to the access problems experienced in Greenhorn Creek.

The No Action alternative is required by 40 CFR 1502.14.

The new construction to bypass the bog and creek fords by the Bowman place was suggested by Ed Osborn, sportsmen's representative, and Dave Dixon, Snowcrest Ranch manager.

2. Description of Alternatives

The alternatives are described by road segments. These segments are numbered on the alternative maps. The number in front of the following segment descriptions corresponds to the numbers on the maps.

a. FEATURES COMMON TO ALL ALTERNATIVES

These road segments would be left as described in all three alternatives:

Road Segment 1. Main Greenhorn Road - This segment of road begins at the Ruby Road at the Snowcrest Ranch headquarters and proceeds to the junction of the North and South Forks of Greenhorn Creek. It is closed to the public under all alternatives.

Road Segment 3. Willow Creek Road - This segment of road is approximately 1.5 miles long. It is a single-lane road, about 12-14 feet wide, and the surface is suitable for all vehicles through most of the year. Grades are gentle, sight distance is adequate, and the road has been used for truck haul associated with the talc mine. This road would be open to public use under all alternatives.

b. ALTERNATIVE 1: No Action

The No Action alternative provides public and administrative access to the national forest at Willow Creek, and the north and south forks of Greenhorn Creek.

In the No Action alternative, road segments 1, 2, 3, 4, and 5 would be left as described in "Features Common to All Alternatives" and in the following paragraphs.

Road Segment 2. North Fork Greenhorn Road (approx. 3/4 mile) - This segment of road is generally single-lane, approximately 12 feet wide, with an occasional turnout. The road does not have any steep (> 12%) sections or pitches, appears to be useable when wet, and is passable to most vehicles except low clearance automobiles. It includes a ford crossing of the North Fork Greenhorn Creek.

Road Segment 4. Willow Creek Road to South Fork Greenhorn via existing road - This existing segment of road is approximately 1 mile long. It leaves the Willow Creek Road at the talc mine processing facilities using approximately 1/4 mile of the mine haul/access road which has grades in the 12-15% range. The road then separates from the mine access road and accesses the saddle in the SE 1/4 of Section 25. The last 1/4 mile of road from the saddle to the South Fork runs straight down the hillside with grades exceeding 20%. This steep section of road has developed deep ruts and is subject to severe erosion. This steep section of road is only passable to 4-wheel drive vehicles and even then only when dry.

Road Segment 5. South Fork Greenhorn Road - This existing road segment parallels the South Fork Greenhorn Creek to its junction with the North Fork. The road is an old set of wheel tracks that were probably developed by wagons used to access old sawmill sites. The road is narrow, rough, and only passable by high clearance vehicles. There are short pitches in the road grade exceeding 8 percent with some associated erosion. Two fords have been developed where the road crosses the South Fork and the North Fork. The last 500-800 feet of the road above its junction with the North Fork crosses a wet, boggy area that is impassable when wet.

c. ALTERNATIVE 2 - Proposed Action

The proposed action provides public and administrative access to the national forest at Willow Creek and the north and south forks of Greenhorn Creek. It responds to the hydrology issue by replacing an eroding portion of road and by filling in a boggy stretch and hardening creek fords.

Road Segment 1. Main Greenhorn Road - Any claims of public rights on this road would be abandoned and the road would remain closed to public use. A physical barrier would be installed on the north end of the road in the vicinity of the Bowman Place.

Road Segment 3. Willow Creek Road - A cattleguard and bypass would be installed near the junction with the Ruby Road to replace the exiting wire gate.

Road Segment 5. South Fork Greenhorn Road - The only work on most of this road would be to level up some of the areas where the outside wheel track is 1 foot or more lower than the inside wheel track and construct a few dips/waterbars in areas where water is running down the wheel tracks.

The last 500-800 feet of the road above its junction with the North Fork crosses a wet, boggy area that is impassable when wet. This section of road would require filter cloth and fill material to allow its use without causing resource damage. The cost of reconstructing this section of road so it would be useable throughout the spring and fall is estimated to be $6000-$8000 and would require establishment of a borrow site to obtain around 500 cubic yards of fill material.

Road Segments 2 and 5. Junction of South and North Fork Greenhorn Roads - This section of road would include using the existing ford on the South Fork and two existing fords on the North Fork. All of these fords would require some work to harden them to prevent erosion and the fords on the North Fork might require a culvert or bridge.

Road Segment 6. New Construction Willow to Greenhorn - This alternative would construct about 1.5 miles of single-lane road with turnouts. The new road would tie into the Willow Creek Road below the talc mine facilities, cross the saddle, and sidehill down into the South Fork. A cattleguard would be installed where the new road crossed the existing fence parallel to the Willow Creek Road.

This road would be constructed at grades less than 8% and would have surface drainage features designed into it to control erosion. The portion of the road from the Willow Creek Road to the saddle would be constructed on a hillside with a slope of less than 20% and would require clearing limits between 20 and 25 feet from top of cut to toe of fill.

The section from the saddle to the South Fork would be constructed on sideslopes between 40 and 55% and would require clearing limits between 30 and 40 feet. Where this new section of road tied into the existing road along the South Fork a tight switchback would be required. The radius designed and constructed at this point would allow use by vehicles towing trailers.

Estimated cost of this section of new construction is $25,000. The mine owners would close the gate at their property to prevent access from the south end. A sign or barrier would be erected at the point where the existing road veers off from the mine road. The existing road along the saddle would be seeded and allowed to revegetate. The existing portion of road from the saddle to the South Fork would be water-barred and seeded to prevent any further erosion. A barrier would be constructed at the junction of this road with the South Fork Greenhorn Road.

d. ALTERNATIVE 3 - Bowman Bypass

This alternative was suggested by Ed Osborn and Dave Dixon, representatives for the sportsmen and Turner Enterprises, respectively.

Alternative 3 provides public and administrative access to the national forest at Willow Creek and the north and south forks of Greenhorn Creek. It responds to the hydrology issue by replacing an eroding portion of road and by bypassing the boggy stretch and two creek fords.

The descriptions of road segments 1, 3, and 6, under Alternative 2, also apply to Alternative 3.

Road Segment 5. South Fork Greenhorn Road - The only work on most of this road would be to level up some of the areas where the outside wheel track is 1 foot or more lower than the inside wheel track and construct a few dips/waterbars in areas where water is running down the wheel tracks.

Road Segment 7. New construction North Fork Bench - This alternative would utilize most of the eastern portion of the road along the South Fork. However, before the road reached the wet, boggy area near its junction with the North Fork it would climb up to the hillside east of the North Fork and follow the bench along the North Fork. This alternative would require construction of about 1 mile of single-lane road with turnouts at an estimated cost of $12,000. This alternative would continue to use the existing ford on the South Fork but would eliminate the need for the two fords on the North Fork. Physical barriers would be constructed on the old road segments where the new construction veered away from the old roads to prevent public traffic from using the old road.

3. Alternatives Considered But Not Given Detailed Study

a. UP GREENHORN CREEK

This traditional access route was given up in 1990 in favor of the Willow Creek route, through negotiations among the signators of the Statement of Intent. Because the primary users of the route agreed the Willow Creek route was satisfactory, access up Greenhorn Creek through the Snowcrest Ranch headquarters was not explored.

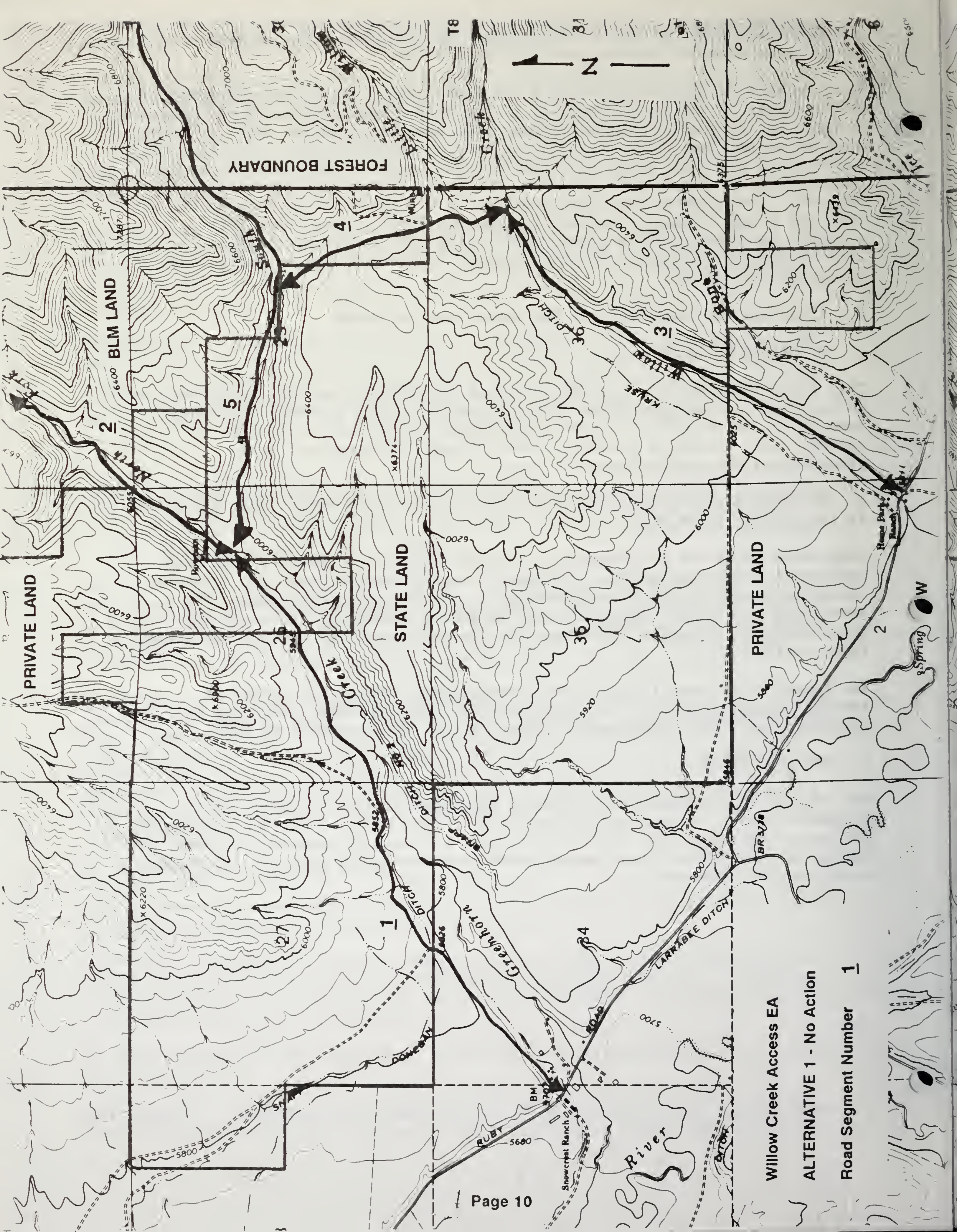
b. NO VEHICLE ACCESS BUT PROVIDE TRAILHEAD AT BOUNDARY BETWEEN BLM AND STATE SE 1/4 SECTION 25 ON FLAT

Long range plans for the Beaverhead National Forest and the Bureau of Land Management, following public involvement, established the need for permanent vehicular access to the Forest Boundary in the Greenhorn drainages. The Beaverhead Forest Plan (pages E-1 and 2) states a need for access to the North Greenhorn area primarily for recreation, by reconstructing the road to handle light traffic.

The Forest Plan (page III-2) states in Management Area 1, the range of recreation opportunities will be maintained. The Greenhorn roads are in a motorized recreation opportunity class and will be maintained as such.

c. FROM THE NORTH

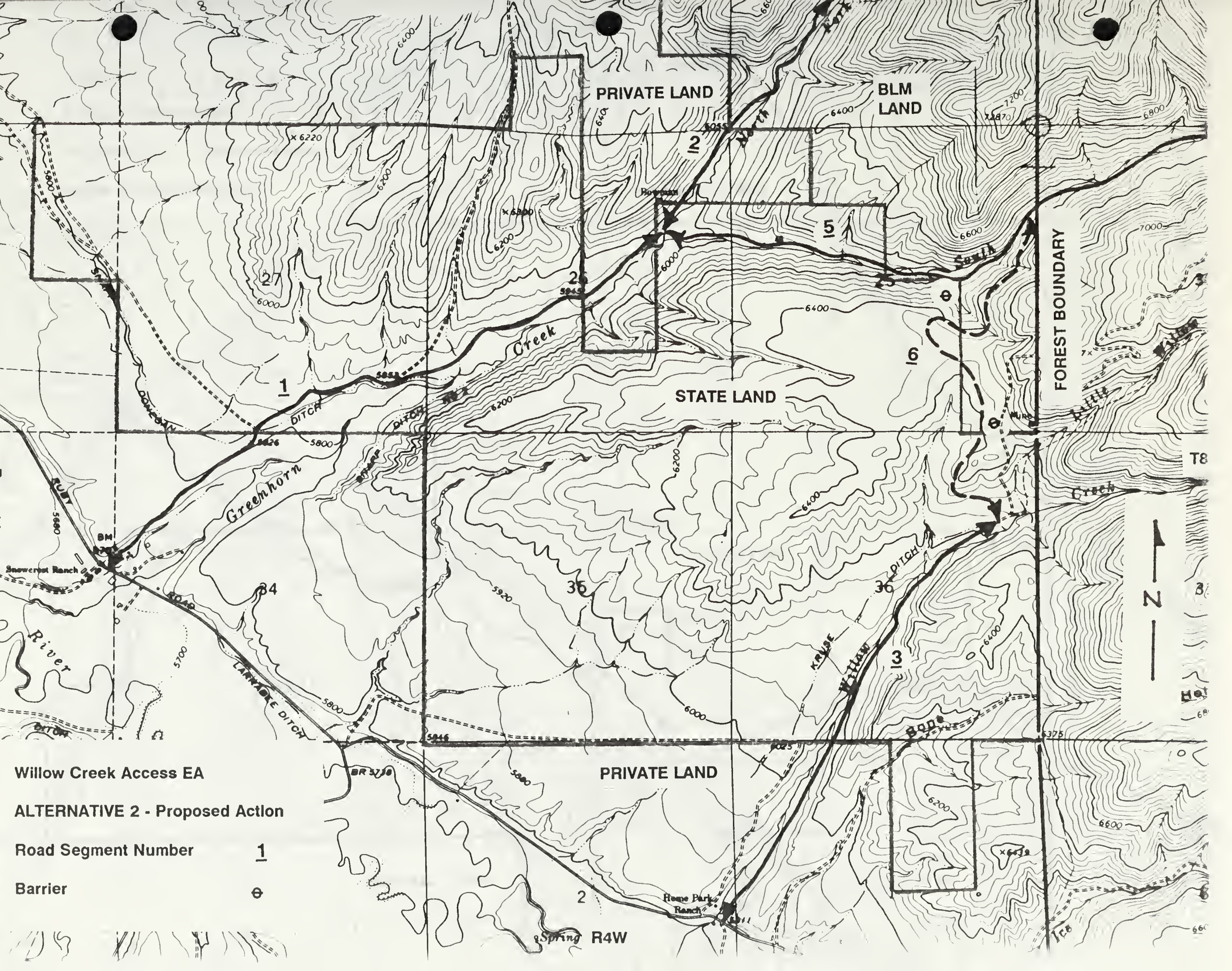
Any route from the north would require reconstruction of the North Fork Greenhorn Road. In keeping with the forest plan standard to maintain present recreation opportunities in the area, we do not want to upgrade this road. Our aim is to get people to the forest boundary at the north fork and not change roads within the boundary.



Willow Creek Access EA

ALTERNATIVE 1 - No Action

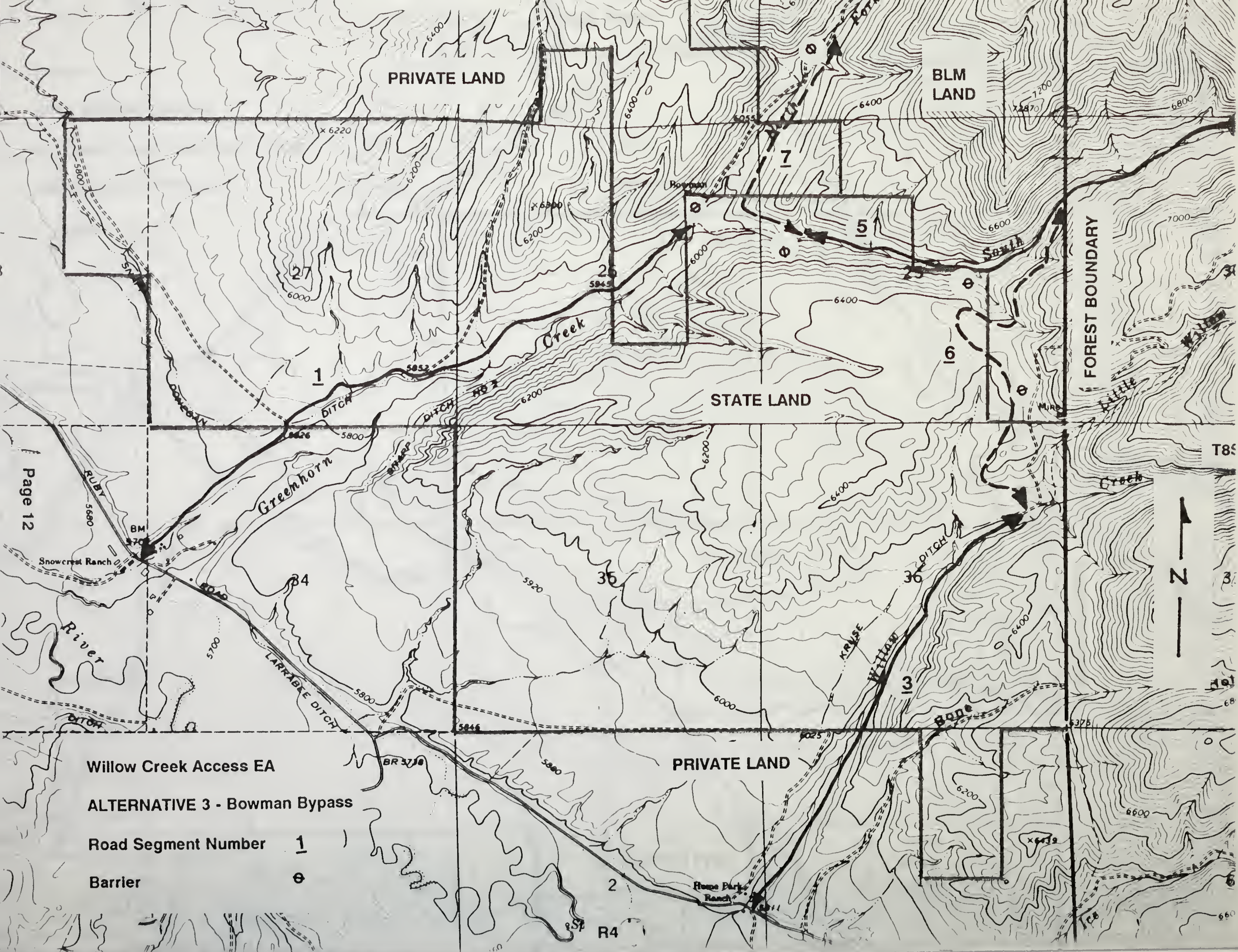
Road Segment Number 1



Willow Creek Access EA

ALTERNATIVE 2 - Proposed Action

Road Segment Number	1
Barrier	⊖



Willow Creek Access EA

ALTERNATIVE 3 - Bowman Bypass

Road Segment Number 1

Barrier ϴ

4. Comparison of Alternatives

a. INTRODUCTION

This section presents a comparison of alternatives using the two key issues. This discussion includes a summary of environmental effects with an explanation of the important differences between the alternatives. A more detailed discussion of the environmental consequences realized by each alternative is presented in section III of this document.

b. ADMINISTRATIVE CONCERNS

All alternatives meet the administrative portions of the purpose and need. We will acquire right-of-way easements to the national forest at Willow Creek, South Fork Greenhorn Creek, and North Fork Greenhorn Creek. By acquiring these easements, we will implement direction from the Forest Plan and 1993 Gravelly/Snowcrest Transportation Plan.

Preparing this EA fulfills one of the Forest Service's agreements in the Memorandum of Understanding: To prepare all documentation necessary to comply with NEPA.

c. HYDROLOGY

Streamflow regime would remain unaffected under all alternatives.

Alternative 1 - No Action

Travel through the fords in road segments 2 and 5, or over the culvert in road segment 3 would cause no significant impact on sediment delivery. The eroding sections of road segments 4 and 5 likely contribute sediment to the South Fork Greenhorn Creek and would continue their contribution under this alternative.

Alternative 2 - Proposed Action

The culvert in road segment 3 would still cause no significant sedimentation. The fords in road segments 2 and 5 would be hardened. Even with an increase in projected use of the roads, the net sediment production would be less than current amounts.

Construction of road segment 6 would not cause a significant increase in sediment production. With seeding and waterbarring of the abandoned road portions, and improving the wet area of road segment 5, the net result would be a decrease in sediment production compared to current amounts.

Alternative 3 - Bowman Bypass

Construction of road segments 6 and 7 would not cause a significant increase in sediment production. With seeding and waterbarring of the abandoned road portions and bypassing two creek fords and the wet area of road segment 5, the net result would be a decrease in sediment production compared to current amounts.

Summary

The differences in sediment production between the alternatives are slight. In order of net decrease in existing sediment production, from slight to none, they rank: Alternative 3; Alternative 2; Alternative 1. Alternative 3 best fulfills the purpose and need to reduce erosion on the steep portion of the road from Willow Creek road to the South Fork Greenhorn road; the boggy portion of the South Fork road; and at the creek fords. Alternative 2 fulfills this purpose and need somewhat, and Alternative 1 does not fulfill it at all.

d. HERITAGE RESOURCES

Alternatives 1 and 3 would both affect two heritage resource sites in a negative way and one in a positive way. Alternative 2 would affect all three sites negatively. The sites involved are not eligible for the National Register of Historic Places, therefore, effects of the alternatives on these sites are not significant, directly, indirectly, or cumulatively.

e. RECREATION

Alternative 1 would not change the recreational experience on or en route to the national forest.

Alternative 2 would change the driving experience on about one mile of road from a challenging jeep road to one able to accommodate a slightly wider range of vehicles. Although a slight increase in use is expected, this would not change the recreation opportunity classification on the forest.

Alternative 3 would change the driving experience on about two miles of road from a challenging jeep road to one able to accommodate a slightly wider range of vehicles. Although a slightly larger increase in use is expected over Alternative 2, this would still not change the recreation opportunity classification on the forest.

All alternatives are consistent with Forest Plan direction for recreation.

f. WILDLIFE

Because the access into the area has been established for a long time, wildlife have changed their behaviors to exist with the existing road and the use it receives. The reconstruction and relocation would be done within the same areas/habitats as the existing road and would not appreciably increase access into the area, therefore, they should have little impact to wildlife species within the analysis area.

All alternatives are consistent with Forest Plan direction for wildlife.

g. VISUALS

Visual quality objectives would be met under all alternatives. All alternatives are consistent with Forest Plan direction for scenic resources.

h. FISHERIES

None of the alternatives would have a direct effect on fisheries in the north and south forks of Greenhorn Creek. The indirect effects on fisheries differ so slightly between alternatives, they would be considered the same. They would continue to introduce a little sediment into the creeks. It would not be enough to affect fish habitat or populations.

Cumulative effects were measured in terms of the number of feet of stream crossing reduced and the effects on fish populations as a result of improved access. There was no important difference between the alternatives. None of them appreciably change the feet of stream crossing or the fish populations.

i. SENSITIVE PLANTS

None of the alternatives would harm the one population of sensitive plant (Cirsium subniveum) found in the project area.

j. PUBLIC SAFETY

Alternative 1 would not change the hazards associated with mixed traffic on the steep, narrow mine road; the 20% slope down to South Fork Greenhorn road; or the boggy stretch on the South Fork road.

Alternative 2 would bypass the first two hazards and improve the boggy stretch. Alternative 3 would bypass all of the listed hazards.

Alternatives 2 and 3 fulfill the purpose and need to eliminate mixed traffic on the bonded road to the talc mine and improve public safety.

k. ROADLESS

The roadless character of the Sheep Mountain roadless area would remain unchanged under all alternatives.

l. NOXIOUS WEEDS

An aggressive, coordinated weed control effort would be needed under all alternatives.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

The descriptions of the affected environment deal with the physical, biological, and social conditions that would affect or might be affected by implementation of any of the alternatives. The descriptions of current conditions provide the basis for assessing the environmental effects of the alternatives discussed in "Environmental Consequences."

Part III of this EA begins with a summary of the Forest Plan management direction. Following that is a description of individual resources and the potential effects the proposals could cause them.

The descriptions which appear in section III of this EA are summaries of detailed specialist reports. The original reports can be found in the project file.

Resources are presented in the following order: Hydrology; Heritage Resources; Recreation; Wildlife; Visuals; Fisheries; Sensitive Plants; Public Safety; Roadless; and Noxious Weeds.

B. MANAGEMENT DIRECTION

The North and South Fork Greenhorn roads pass primarily through Management Area 1 (MA 1) lands. Management Area 1 contains a wide variety of nonforest, and forested lands which are unsuitable for timber production but which accommodate many other resource uses. Management goals are to maintain the existing opportunities for utilization of the resources found within the area, managing in a custodial role with a low level of investment (FP, pages III-2 through III-4).

Standards for MA 1 state dispersed recreation opportunities will be provided at a low level of investment focusing primarily on travel planning. The range of recreation opportunities will be maintained.

Pockets of MA 20 are found along the north and south fork roads. MA 20 lands are timber stands suitable for management at a moderate level of intensity, which contain high wildlife values. Management goals are to maintain high quality wildlife habitat while allowing cost efficient, moderate-intensity levels of timber harvest and domestic livestock grazing (FP, pages III-63 through III-66).

The 1986 Beaverhead Forest Plan (pages E-1 and 2) states a need for access to the North Greenhorn area primarily for recreation, by reconstructing the road to handle light traffic. The 1993 Gravelly/Snowcrest Transportation Plan also lists the North and South Forks of Greenhorn Creek as national forest lands to which we need to acquire right-of-way.

C. HYDROLOGY

1. Affected Environment

a. ANALYSIS AREA

This project is located within the Greenhorn and Willow Creek drainages. These streams drain into the Ruby River, a significant tributary of the Missouri River basin. The analysis area for the Greenhorn basin considers the contributing area of both the North and South Forks of Greenhorn Creek, above their junction. Little Willow Creek is a first order basin about 1 square mile in size.

These drainages are mostly national forest land, but also include State, BLM, and private land.

b. REGULATORY FRAMEWORK

Clean Water Act (1972, Amended 1987):

Section 101> The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.
Section 208(2)(F)> A process to identify agriculturally and silviculturally related nonpoint sources of pollution, and set forth procedures and methods to control to the extent feasible such sources.
Section 303> States have responsibility to develop and review water quality standards.
Section 313> Requires all Federal Agencies to control and abate water pollution under all Federal, State, and local requirements. Executive Order 12088 specifies this compliance.
Section 319> Requires Federal consistency with the State Non-Point Source (NPS) program. The State NPS program includes a process for identifying Best Management Practices (BMPs) to control identified sources.

Compliance with State requirements for protection of waters of the State of Montana (Administrative Rules of Montana (ARM), 16.20.603) means that "land management activities must not generate pollutants in excess of those that are naturally occurring, regardless of the stream's classification. 'Naturally occurring' is defined by the ARM as that water quality condition resulting from runoff or percolation over which man has no control or from developed lands where all 'reasonable' land, soil, and water conservation practices have been applied." BMPs are reasonable only if beneficial uses are protected.

Compliance with Montana water quality law and regulations have three elements in common:

1) BMPs are applied;
2) Beneficial uses are not impaired;
3) Monitoring is in place to test whether BMPs are adequate to protect beneficial uses (feedback loop).

The NFMA requirement for the conservation of soil and water resources is listed in 36 CFR 219.27 (f). "Conservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources and their responses under management and shall be guided by instructions in official technical handbooks."

c. AFFECTED ENVIRONMENT

i. Designated Beneficial Uses

The designated beneficial uses of water are specified by the Surface Water Quality Standards, as stated under Title 16, Chapter 20, Sub-Chapter 6 - SURFACE WATER QUALITY STANDARDS, in the Administrative Rules of Montana (ARM). The classification of waters within the analysis area include B-1 waters. The following is a description of beneficial uses under this classification, and a reference to the water quality standards designed to protect them: **B-1 Classification** (ARM 16.20.618) are waters suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. Specific water quality standards for waters classified B-1 are given in ARM 16.20.618 2(a) through 16.20.618 2(iv).

ii. Data Collection and Analysis

Data for the description of the affected environment, and for use in running the R1 WATSED model came from the Land Systems Inventory (LSI) database.

iii. Greenhorn Creek

Past Management: Past management activities in this basin include mining, grazing, and roads/trails. The Willow Creek Talc Mine deposited overburden onto the hillslope within the South Fork of Greenhorn Creek basin. This consists mainly of large rock fragments which pose little threat of sediment introduction. Some mining and road building took place along the ridge within the basin. The disturbance is far above the perennial channel, with sediment introduction very unlikely.

Current Management: A limited amount of grazing activity exists within the watershed. Unimproved roads follow both forks of Greenhorn Creek. A cumulative effects analysis done on watersheds forest-wide for the Beaverhead National Forest Oil and Gas Analysis gave Greenhorn Creek a total Equivalent Disturbed Area of 2%. This is a very insignificant figure. No formal, on-the-ground watershed inventory has been done at this time.

Water Quality: No water quality data exists for the Greenhorn drainage. Water quality criteria established to protect the beneficial uses will have to be met.

Stream Channel Morphology: Rosgen channel types within the project area are estimated to be B3/B4. These channel types are fairly resilient to minor management actions. Major inputs of sediment can affect the stream's sediment storage/transport capability, which could result in a shift in channel morphology.

Watershed Description: Watershed characteristics were obtained from the LSI database. The following interpretations were made regarding the significance of these characteristics with respect to watershed function and process.

The Greenhorn watershed is dominated by moderate slopes. Water and sediment routing to the mainstem as a function of slope can be depicted as efficient, but not extreme.

The basin is dominated by high energy aspects, meaning that runoff will occur earlier and have sharper peak than watersheds dominated by low energy aspects.

The basin consists mainly of mid-elevation lands. Timing and magnitude of runoff, as a function of elevation, is about average.

The basin has a relatively high percentage of non-forested land, meaning runoff as a function of vegetation type is somewhat flashy.

The percentage of landtypes within the basin prone to mass wasting is insignificant.

Water yield is average for the Beaverhead.

The rock types in the basin have a low erosion potential.

The basin has an insignificant amount of existing roads, but they do exist very near the stream channels.

Conclusion: The basin can be characterized as having an early, somewhat flashy runoff. Sediment production is low.

iv. Little Willow Creek

The basin description for Little Willow Creek will be discussed in a narrative fashion for two reasons. First, the amount of proposed activity is relatively very small, as only a short segment of road construction is proposed within the basin. Second, the basin is first order, too small for analysis using the Land Systems Inventory (LSI) database.

Little Willow Creek is a first order basin about 1 square mile in size, with an intermittent channel flowing water for a short time in the spring. Past management consists of mining, logging, road building, and grazing. Disturbance from mining and the associated road system is by far the main impact within the basin. Water resource effects remain low, however, due to the low erosive potential and the intermittent flow characteristic of the basin.

2. Environmental Consequences

A watershed approach is necessary to describe potential effects, as water resource effects are integrated within a basin as a whole. Water resource effects are determined on the main stream channel, which reflects all of the natural processes and land management activities within the basin.

a. TOOLS USED IN THE ANALYSIS

The main tool used to determine effects is the R1 WATSED model. This model quantifies estimates of natural, existing, and future sediment yields from proposed activities. The meaning of the R1 WATSED results is interpreted within each alternative description and under the heading, "Consistency With the Forest Plan."

b. SEDIMENT AND STREAMFLOW REGIMES

Road construction/reconstruction can effect sediment production, and to a lesser extent streamflow regime. Effects can be direct, indirect, and cumulative. Effects may be beneficial or detrimental. Any determination of significance should be based on the protection of beneficial uses.

i. Sediment

Stream crossings, including bridges, culverts, and low-water fords can have the direct effect of introducing sediment to a channel. Sediment generated through exposing cut, fill, and road surfaces to rain and snowmelt runoff is an indirect effect. Cumulative effects result when the incremental effects of the proposed action are added to other past, present, and reasonably foreseeable future actions. An interpretation of cumulative effects is whether a shift in stream channel morphology will occur.

Potential changes in sediment delivery resulting from implementing the project are derived through use of the WATSED sediment model. These changes in sediment delivery reflect potential indirect effects. Interpretations of the model results are based on any effect of sediment on the stream's sediment storage/transport capability which could result in a shift in stream channel morphology. A shift in stream channel morphology could likely result in a loss of one or more beneficial uses. Beneficial effects are usually associated with road reconstruction, where an improvement in design and/or location results in a decrease in sediment production.

ii. Streamflow Regime

Road construction/reconstruction can affect the timing and magnitude of runoff. This happens by increased exposure of the snowpack, interception of subsurface flows, and increased efficiency of routing surface flows. These effects are generally not realized until a threshold has been met or exceeded, typically 2 miles of road/square mile or greater. Very few watersheds within the Beaverhead National Forest have realized road densities equal to or greater than this.

c. EFFECTS COMMON TO ALL ALTERNATIVES

Streamflow regime would remain unaffected as road densities under all alternatives are well below established thresholds.

d. ALTERNATIVE 1: No Action

Direct Effects: Three low-water fords exist on road segments 2 and 5, and a culvert crossing on road segment 3. The low-water fords have the highest sediment potential. With the present light use of these crossings, impacts to the water resource are insignificant. The culvert crossing on road segment 3 also presents an insignificant impact.

Indirect Effects: The WATSED model has computed the existing condition of sediment production as 1.4% over natural. Road segments 1, 2, and 3 are fairly stable and currently are not significant sources of sediment. Road segments 4 and 5 currently have sections which do contribute sediment to Greenhorn Creek. Road segment 4 includes a steep section of road which lacks adequate surfacing and cross-drains. It's likely sediment is introduced into South Fork Greenhorn Creek from this segment. Road segment 5 has severely rutted, wet sections which could contribute sediment to Greenhorn Creek.

Cumulative Effects: Due to the largely unmanaged existing condition of the Greenhorn watershed, in addition to the lack of any foreseeable future actions, cumulative effects will not impact the beneficial uses.

e. ALTERNATIVE 2: Proposed Action

Direct Effects: Three low-water fords exist on road segments 2 and 5, and a culvert crossing on road segment 3. The low-water fords have the highest sediment potential. Under this alternative, a reduction in sediment would result from hardening the crossings. Given the upgrade in road design accessing these crossings, an increase in use is likely. The net result is slight reduction in sediment production. If culverts or bridges are constructed on North Fork Greenhorn Creek, a greater reduction in sediment would be realized. The culvert crossing on road segment 3 presents an insignificant impact.

Indirect Effects: WATSED has computed sediment production as 4.5% over natural. This reflects construction of road segment 6, about 1.5 miles of single-lane road with turnouts. This result in itself is an insignificant increase in sediment. The model does not reflect beneficial effects of seeding and water-barring the existing road, as well as the beneficial effects of improving the wet areas of road segment 5. Because of the poor existing condition of certain sections of road segments 4 and 5, the net result would be a decrease in sediment production.

Cumulative Effects: Due to the largely unmanaged existing condition of the Greenhorn watershed, the beneficial effects of the proposed action, and the lack of any foreseeable future actions, cumulative effects would not impact the beneficial uses.

f. ALTERNATIVE 3 - Bowman Bypass

Direct Effects: Two existing stream crossings, the ford on South Greenhorn Creek and the culvert crossing on Willow Creek, would be retained. The two fords on North Greenhorn Creek would be closed. A reduction in sediment production would result in a beneficial effect.

Indirect Effects: WATSED has computed sediment production as 5.6% over natural. This reflects construction of road segments 6 and 7, a total of about 2.5 miles of single-lane road with turnouts. The model does not reflect the beneficial effects of closing and/or rehabilitating the old sections of road segments 4 and 5 no longer needed. Because of the poor existing condition of certain sections of road segments 4 and 5, the net result would be a decrease in sediment production.

Cumulative Effects: Due to the largely unmanaged existing condition of the Greenhorn watershed, the beneficial effects of this alternative, and the lack of any foreseeable future actions, cumulative effects would not impact the beneficial uses.

g. CONSISTENCY WITH THE FOREST PLAN

Fisheries standard 6 (FP page II-30) states that if modeling of timber management or road construction activities predicts sediment production increases beyond 50% over natural, then project activities will be modified, rescheduled or deleted from the program of the Forest Plan. None of the alternatives come close to this threshold. Though Alternatives 2 and 3 show modest increases in the percent over natural levels of sediment production, a reduction in sediment would be realized due to the obliteration of Road Segments 4 and/or 5.

In conclusion, implementation of either Alternative 2 or 3 would result in a net benefit to the water resource.

D. HERITAGE RESOURCES

1. Introduction

As per 36 CFR 60.4 and the 1980 amendments to the National Historic Preservation Act of 1966 - Section 101(a)(1)(A), the following guidelines are established against which we assess legal significance.

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

C. That embody the distinctive characteristics of a type, period, or method of construction, or the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may yield, information important in prehistory or history.

2. Analysis Area

The Willow Creek Access Project is located at the foot of the Greenhorn Mountains at the transition between sage grassland and coniferous forest habitats. Several prehistoric archeological sites are located at the interface of these two habitats. The sites discussed here are not eligible for the National Register of Historic Places. However, lack of significance does not preclude protection of heritage resources (Beaverhead National Forest Plan 1986:II-2).

a. PAST STUDIES

Past heritage resource studies in the project vicinity have identified one prehistoric camp site, 24MA697 (Fredlund 1985). Fredlund recorded and evaluated this site which contained a historic foundation and buried prehistoric component on the primary terrace above Willow Creek. The buried, prehistoric component of the site led Fredlund to suggest the site was eligible for the National Register of Historic Places under criterion D because it had, "high potential to yield information on past human behavior at the local and regional level."

This site is outside the project's area of potential effect.

b. IDENTIFIED HERITAGE RESOURCES

Ben Munger, Archeologist on the Beaverhead National Forest surveyed the project in April and May of 1994. Survey areas were defined by staked road locations and existing roads. The new road locations were surveyed using transects along the centerline zig-zagging to either side of projected road alignment. Areas that would be eroded by run-off created by the new roads were also surveyed. Old road locations that would be improved and receive more traffic were also surveyed as were locations in which barriers would be placed to close certain existing road segments.

Three new prehistoric archeological sites and two new prehistoric isolates were recorded in the project area. The archeological sites appear to be temporary hunting camps, located on secondary terraces at the ecotone between grass/sage and coniferous forest. The sites have been damaged by previous road construction and by continual use of existing roads. Subsurface testing did not reveal a buried component in any of the three sites. Artifact density and diversity is low, which suggests the sites are temporary hunting camps.

It appears none of the sites are eligible for the National Register of Historic Places under criterion C or D. The setting and sites are not unique and there is scant data which could be recovered to be used to reconstruct local or regional prehistory.

3. Environmental Consequences

a. ALTERNATIVE 1 - No Action

Alternative 1 would affect two heritage resource sites in a negative sense because of the continued use of existing roads which have been built through/over identified heritage sites. This alternative would affect one heritage resource site in a positive sense, in that no new roads would be constructed.

b. ALTERNATIVE 2 - Proposed Action

Alternative 2 would affect all three heritage sites in a negative sense. New road construction on the Willow to Greenhorn segment would partially destroy one site, though the site is recommended as not significant. Continued use of existing roads would damage two other known sites in the same sense as the no action alternative.

c. ALTERNATIVE 3 - Bowman Bypass

Alternative 3 would affect two heritage resource sites in a negative sense and one heritage resource in a positive sense. The construction of the Willow to Greenhorn segment would damage one site, which is recommended as not significant. The continued use of the South Fork segment would negatively affect a known site, though the placement of a barrier on the steep section would slow erosion. The placement of a barrier on the South Fork segment where the new road construction of the North Fork Bench segment rejoins the existing road would help protect an existing site. The placement of the barrier and the discontinued use on the South Fork segment would be a positive affect.

d. CUMULATIVE EFFECTS

The negative impacts of road construction and use described above, when added to the effects of past, present, and reasonably foreseeable activities, would not significantly affect heritage resources in the Gravelly/Snowcrest area.

e. SUMMARY

Consultation with the State Historic Preservation Office will take place in September 1994. The Beaverhead National Forest Heritage Resource Program will file a Cultural Resources Inventory Report with the Montana SHPO describing the Willow Creek Access Project and evaluating the newly recorded sites which may be affected by the project regardless of the chosen alternative. The filing of the Cultural Resources Inventory Report with our evaluation of significance of the archeological sites discussed in these chapters is considered legal compliance with the National Historic Preservation Act of 1966, as amended.

E. RECREATION

1. Affected Environment

a. ANALYSIS AREA

The area accessed by the proposed road consists of the National Forest and BLM portion of the drainages of Willow Creek, South Fork of Greenhorn Creek, Meadow Fork of Greenhorn Creek, and the North Fork of Greenhorn Creek. This area lies along the west side of the Greenhorn Range and is basically inaccessible except by using the roads discussed in this proposal. Trail access is available via the White Bear Trail and The North Fork Greenhorn Trail. These trail accesses are neither convenient nor direct.

b. PAST MANAGEMENT

Until a few years ago the primary access to North Greenhorn Creek was directly through the Snowcrest Ranch headquarters and up North Greenhorn Creek. From the Snowcrest Ranch headquarters to the Bowman Place this road is in much better condition than the connecting roads between Willow Creek and North Greenhorn Creek. In the past, therefore, there was a better and more direct access to the federal lands up North Greenhorn Creek.

c. EXISTING CONDITION

The Recreation Opportunity Spectrum classification for the area is Semi-Primitive Motorized along the area accessed by the North Fork Greenhorn, South Fork Greenhorn, and Willow Creek Roads and the North Fork Greenhorn Trail. The area beyond these motorized routes is Semi-Primitive Non-Motorized.

The area presently offers a setting that feels remote and difficult to access, minimally impacted by man's activities. The national forest and BLM portions of the North and South Greenhorn roads and the connecting roads are low-standard wheel tracks with ruts, fords, steep slopes, bogs, and overhanging brush. These roads are suitable for use only by high-clearance vehicles and few people would attempt to drive them without four-wheel-drive. For people who drive-four-wheel drive roads for pleasure, these roads offer some good opportunity, although no loop routes are available. The North Fork Greenhorn and South Fork Greenhorn Roads on national forest and BLM lands are closed to motorized use December 2 through May 15 to protect wildlife winter range habitat.

The Willow Creek Road, up to where the road leaves Willow Creek and turns north toward the South Fork of Greenhorn Creek, is somewhat higher standard. This road can normally be driven by two-wheel-drive pickup trucks without any challenge.

The North Fork Greenhorn Trail is open to motorcycles May 16 through September 9. Except for this trail and the previously described roads, national forest land in the area is closed to motorized travel.

Recreation use in the area is light except during hunting season. Non-hunting season use consists of some horseback and hiking trail recreation, a little dispersed camping, and four-wheel-driving.

Hunting season use is moderate. There is moderate traffic on the open roads, camping along the roads and at the ends of the roads, and moderate to heavy use on all system trails. Camping is heaviest near the end of the North Fork Greenhorn Road with somewhat lighter use along the South Fork Greenhorn Road and light use up Willow Creek. There is an existing trail up Willow Creek that is not shown on maps but that is used during hunting season and occasionally during the summer. It is approximately 300 feet from the Willow Creek Mine access road to the Forest Boundary at Willow Creek. There is no legally perfected access from the road to the Forest.

2. Environmental Consequences

a. ALTERNATIVE 1 - No Action

The existing situation would not change.

b. ALTERNATIVE 2 - Proposed Action

Rerouting of the road between Willow Creek and South Greenhorn Creek would result in easier access to the area north of Willow Creek. Use in the area would probably increase somewhat, particularly in hunting season. The improved road would stop short of the national forest boundary in South Willow Creek. The actual recreation experience available on the National Forest would change very little although the road on the BLM land along South Greenhorn Creek would be improved considerably.

Access would be easier and about one mile of road would change from a challenging "jeep road" to a better, but still low-standard, road with fewer challenges and suitable for a slightly wider range of vehicles. People pulling camp trailers or horse trailers would be able to take them almost to the forest boundary at South Greenhorn Creek rather than having to stop on top of the bench south of South Greenhorn Creek.

c. ALTERNATIVE 3 - Bowman Bypass

This alternative would result in improving a second section of road in addition to what would be improved in Alternative 2. There would be a more direct improvement in access to North Greenhorn Creek as well as to South Greenhorn Creek. There would be more increase in recreation use than in Alternative 2. There would be less "jeep road" driving opportunity and more opportunity for driving on better road. Roads on the national forest lands would still not be improved, but the overall experience would feel less remote and isolated due to easier access.

The road section between South Greenhorn Creek and the reroute at the Bowman Place is not proposed for improvement. Vehicle travel on the unimproved sections of the access roads would still be practical with four-wheel-drive vehicles only.

The ROS classification of the recreation experience on federal lands in the vicinity of the roads would remain Semi-Primitive Motorized, although the road improvements would move the experience toward the more developed end of that class.

d. CUMULATIVE EFFECTS

The effects of road use, construction, and reconstruction, when added to past, present, and reasonably foreseeable actions, will not significantly affect recreation opportunities in the Gravelly/Snowcrest area.

3. Recommendations and Mitigation

a. RIGHTS-OF-WAY

Rights-of-way need to give the public and the Forest Service access for recreation, administration, fire control, and other purposes as needed. The right-of-way should provide for the possibility of road and vehicle access which might possibly be needed in the future.

b. WILLOW CREEK

No road access to Willow Creek is needed at this time. Parking would be needed on state land in the SE1/4 of the NE 1/4 of section 36. The creek bottom is too narrow and the soils too wet to allow parking on the National Forest at the boundary. Public access to Willow Creek on the National Forest should continue to be non-motorized.

The trail up Willow Creek should be made a part of the Forest trail system and maintained as a low standard or "way" trail.

c. SOUTH FORK GREENHORN CREEK

Parking for vehicles and trailers will be needed at the end of the improved road section just below the forest boundary in South Greenhorn Creek. The proposed road improvements will make it possible to bring trailers to that point but the road condition on the unimproved road will prevent going farther. A place will be needed at the end of the improved road to allow parking, turning around and dispersed camping. Other than parking and turning space no need for facilities is anticipated in the near future since use will probably remain relatively light.

d. NORTH FORK GREENHORN CREEK

Some parking will also be needed at the end of the improved section along North Greenhorn Creek (Bowman Bypass). The need will not be as great here as at South Greenhorn Creek because the intervening stretch of unimproved road will stop many vehicles from going on to North Greenhorn Creek.

F. WILDLIFE

1. Affected Environment

a. INTRODUCTION

The wildlife biologist analyzed the effects of the proposed action and its alternatives on big-game wildlife species, non-game species, Forest Plan indicator species, and threatened, endangered, and sensitive (t,e,& s) wildlife species. A complete discussion of t,e, & s wildlife species will be presented in a Biological Evaluation (BE) to be attached to the final version of this EA.

This section contains a very brief summary of the information to be found in the BE. Also presented here is a summary of the report on wildlife species not classified t,e, & s. The complete wildlife report can be found in the project file.

b. ANALYSIS AREA

The direct effects area for wildlife species is defined by the Ruby Road on the west, Ice Creek on the south, the crest of the Greenhorn Range on the east, and Jasmine Creek on the north. This area is located on state, private, and Madison Ranger District, Beaverhead National Forest lands, approximately 15 miles south of Alder in southwestern Montana.

c. WILDLIFE SPECIES

i. Forest Plan Indicator Species

Wildlife species considered in this analysis were identified during the scoping process and/or designated as wildlife "indicator species" by the Beaverhead Forest Plan. Indicator species include grizzly bear, peregrine falcon, bald eagle, gray wolf, elk, pine marten, sage grouse, trumpeter swan, and goshawk.

The only indicator species not covered under t,e,& s species are elk, pine marten, and goshawk.

Elk. The population in the Gravelly Elk Management Unit (EMU) is between 7,000 and 7,500. Security is moderate to low, due to open road densities and limited cover. Elk generally summer in high basins and move to lower-elevation winter ranges when snow begins to accumulate in November. There are elk calving/ nursery areas near French Gulch and Barton Gulch, adjacent to the Willow Creek analysis area. Elk, however, can calve throughout the area as they migrate to higher elevations in the spring.

Forage throughout the area seems to be adequate for the present population of elk. Big game populations in the Gravelly Mountains are more likely to be limited by vulnerability (number of permits issued) during hunting season than by forage availability.

Pine marten. Current population and trend are unknown. Based on the current low demand for furs, we suspect marten populations are stable.

Goshawk. Current population and trend are unknown. Nesting and foraging habitat appear to be non-limiting (West Fork EA, FOIA data). One known territory within the analysis area is located in the North Fork Greenhorn drainage. No intensive surveys have been done to locate other territories within the analysis area.

ii. Big-Game Species

Ungulates found within the analysis area include elk, moose, white-tailed and mule deer. Some moose may winter along Willow and Greenhorn Creeks and their associated tributaries, but the analysis area serves principally as spring, summer, and fall habitats for these species.

Antelope are occasional in the sage/grassland areas near the Forest Boundary. Black bear are scattered throughout the area, concentrating in the larger blocks of timber. Mountain goats live in the peaks of the Greenhorn Mountains, but no bighorn sheep are found within the analysis area.

iii. Non-game Species

The area provides a broad diversity of habitats for non-game species. Habitat needs for non-game species (food and cover) do not generally differ from big game species, however, the needs can often be met over a much smaller area. Some of the unique habitats important to these species include sagebrush, aspen, riparian zones, old-growth Douglas-fir/spruce, and old-growth lodgepole stands.

Coyotes, beaver, bobcat, wolverine, pine marten, red fox, and mountain lion may live in the area. Location of these animals is tied to the availability of prey and the amount of disturbance nearby.

Blue, ruffed, and Franklin's grouse are found throughout the area. Several raptor species also are found here: red-tailed hawk, goshawk, prairie falcon, American kestrel, Swainson's hawk, rough legged hawk, golden eagle, great horned owls, and great gray owls.

iv. Threatened, Endangered, and Sensitive Species

Threatened, endangered, and sensitive species which are known to be found on the Beaverhead National Forest are: grizzly bear, peregrine falcon, bald eagle, gray wolf, boreal owl, ferruginous hawk, sage grouse, trumpeter swan, lynx, wolverine, northern bog lemming, and black-backed woodpecker. Townsend's big-eared bat, flammulated owl, fisher, and Harlequin duck are suspected to be found on the Beaverhead National Forest. Bald eagles nest in the area around the Chain of Lakes (Elk, Goose, Cliff and Wade Lakes), while peregrine falcons nest in the Hoodoo Pass area. Grizzly and gray wolf sightings are regularly reported in the Gravelly Mountain Range.

The project area is not within the Management Situation II Grizzly Recovery Area (portion of the Lee Metcalf Wilderness). No other portion of the Forest is in a Recovery Area nor recognized as "Critical" for any of the threatened, endangered, or sensitive species found on the Forest. The project area is not near any of the known bald eagle or peregrine falcon nests.

Sensitive species which may be found within or near the analysis area are: boreal owl, ferruginous hawk, sage grouse, lynx, fisher, black-backed woodpecker, flammulated owl, wolverine, and Townsend's big-eared bat. The other sensitive species are not located in the area either because the habitat does not exist for them or it is unoccupied (USDA 1989).

2. Environmental Consequences

a. INTRODUCTION

The Willow Creek Road project has the potential to affect wildlife resources in two primary ways: 1) habitat alteration and 2) disturbance (from project activities and post-project public activity). The most prevalent effect of habitat alteration is potential for a reduction in carrying capacity. Carrying capacity can potentially be reduced by physical changes in seasonal use habitats (ie. birthing/nursery areas, winter range, etc.). Disturbance from project activities can displace wildlife from preferred habitats and place them under undue stress. This is of particular importance during winter (wintering, trapping), spring (birthing, nesting) and fall (hunting) seasons. Increased public activity in an area can increase vulnerability of those species that are hunted and/or trapped and can cause shifts in traditional use patterns.

b. EFFECTS COMMON TO ALL ALTERNATIVES

i. Forest Plan Indicator Species

Elk. The project area lies within winter range, but the alternatives would have very little effect on elk habitat. Some acres of sagebrush/grassland that could potentially serve as winter range would be lost from the reconstruction and relocation of the road, but due to the limited size of the project area this would have very little effect on available winter range.

Pine Marten. The project area is not within pine marten habitat and the alternatives would not increase access into new areas, therefore, there would be no effect on martens.

Goshawk. The project would have no effect on potential nesting habitat. Some acres of sagebrush/grassland that could potentially serve as foraging area would be lost from the reconstruction and relocation of the road, but due to the small size of the affected area and the amount of foraging area available to goshawks, this would be of little impact.

ii. Threatened, Endangered, and Sensitive Wildlife Species

The Willow Creek Road project would have little effect on any threatened, endangered, or sensitive species found on the Beaverhead National Forest. Due to the nature of the sensitive species, their habitat use, existing road location and use in the area, and limited impact from the project, there would be very little effect on sensitive species.

iii. All Wildlife Species

Because the access into the area has been established for a long time, wildlife have changed their behaviors to exist with the existing road and the use it receives. The reconstruction and relocation would occur within the same areas/habitats as the existing road and would not appreciably increase access into the area, therefore, they should have little impact on wildlife species within the analysis area.

c. CONSISTENCY WITH FOREST PLAN STANDARDS

The Forest Plan standards for threatened, endangered, sensitive and other wildlife species will be met by all alternatives.

d. MITIGATION AND MONITORING

Coordinate the road restrictions between the State, BLM, and Forest Service to the existing December 2 through May 15 restriction to motorized access for "Conflict of Use and Winter Game Range" considerations.

Effectiveness of Above-listed Mitigation

Experience on the Beaverhead National Forest demonstrates travel plan restrictions are very effective in protecting resource values. This is limited to the public complying with the restrictions and does not hold true for illegal use within restricted areas.

e. CUMULATIVE EFFECTS

i. Analysis Area

The analysis area for cumulative effects includes national forest land in the Gravelly and Snowcrest Mountains, and adjacent state and Bureau of Land Management lands.

ii. Past Management

Past management of the area included timber sales and road construction, livestock grazing, mining, and campground and guard station construction.

iii. Current Management

Current management of the area includes grazing within 36 grazing allotments; sporadic mining; and salvage harvest in the West Fork Madison area.

Recreational use includes summer camping, hiking, fishing, and sightseeing; fall hunting; and winter snowmobiling.

iv. Reasonably Foreseeable Actions

Twelve cattle and horse allotments, and all sheep allotments are due for updated Allotment Management Plans.

Timber sale activity will continue on the West Fork Sale. The State Department of Lands is planning timber sales in Teepee Creek, adjacent to the southern forest boundary in the Centennial Valley and Idaho Creek, adjacent to the northwestern forest boundary.

An EIS for Oil and Gas Leasing on the Beaverhead National Forest will be completed in 1995. There might be some exploration drilling, but based on unfavorable economic conditions and the statistical unlikelihood of a discovery becoming a producing field, actual production of oil and gas would not be likely for at least 10-15 years.

A small-scale placer operation is expected to continue in the West Fork Madison drainage. Talc mining will likely continue at the active mines.

v. Effects

Allotment management plan updates are expected to result in improved riparian areas with maintenance or improvement of upland conditions. This would have a beneficial effect on wildlife, fish, and plants.

Timber salvage operations using temporary roads are designed to remove deadwood with little impact on standing, green trees. Leaving saplings to grow and restricting use of obliterated temporary roads would limit the effect on hiding cover and vulnerability. Vulnerability should not change as a result.

Low potential for development of minerals would mean a minimal impact to wildlife from this type of activity.

Reconstruction of trailheads and reconstruction and surfacing of roads would not impact any new areas. Relocation of portions of roads and construction of new trailheads would have potential to impact wildlife habitats. Exact locations would be reviewed by a wildlife biologist to ensure least impact to wildlife.

Legal recreational use can keep wildlife impacts to a minimum. Illegal use of trails, roads, and restricted areas poses the greatest impact to wildlife species. This type of use not only destroys habitat but displaces animals from preferred and secure habitats, increasing their vulnerability.

G. VISUALS

Stretches of the road on the hillside would be visible from the Peterson Ranch, when looking east, but the road location would be hidden from all Sensitivity Level 1 & 2 sites and travel routes except the Snowcrest Trail. The road would be in background from the Snowcrest trail several miles away, so the effects of the road should be acceptable, if visible at all.

Site-specifically, the road location is in a Modification Visual Quality Objective (VQO). Since BMP's would be followed and cut and fill slopes would be seeded, this VQO should be met.

H. FISHERIES

1. Affected Environment

a. ANALYSIS AREA

The North and South Forks of Greenhorn Creek are the only streams with the potential to be affected by this project. The streams flow through Forest Service, BLM, State, and private lands. The following descriptions of fisheries deal with 4.5 miles of the North Fork, from its junction with the South Fork, to the end of the road on national forest land. The South Fork is described from the junction, to a point one mile upstream.

b. PAST MANAGEMENT

Livestock grazed along the creeks in the past, but impacts to the riparian areas are not visible.

Placer mining occurred in the early 1900's (Oswald 1982). On the North Fork in section 8, evidence of past placer mining was visible near and downstream of an old cabin site. About 3/4 mile of creek channel is wider and shallower, apparently as a result of placer mining and the extra sediment which it caused.

Posts and poles were cut in section 8 within the last 10 years, without impact on the stream or riparian area.

Camping, mainly by big game hunter, has been the primary use of the area in the last few years. The main impact by the campers has been by fording the creeks with motorized vehicles.

c. CREEK FORDS

There is one ford on the South Fork road. On the North Fork, there are 16 fords and six side drainages with flowing water crossed. It is estimated 415 feet of road has water flowing down it. This includes fords, water flowing down one or both wheel tracks in the road, and an 80 foot section of road in the stream itself. Each ford produces some sediment when crossed. Slow crossings in four-wheel-drive produce very little sediment; a fast crossing or one where the banks are chewed up by spinning tires produces more sediment.

The amount of sediment currently introduced by motorized traffic has little affect on the fisheries resource.

The stream crossings, although numerous, produced little sediment when crossed. The total width of bank and water affected by the crossings was about 230 feet, less than 1% of the stream's length along the road.

d. FISH POPULATIONS

In addition to Forest Service stream surveys, the MDFW&P (Oswald 1982) and the BLM (Kampwerth 1994) have conducted habitat and/or population surveys.

In 1982 Oswald found both brook trout and what appeared to be westslope cutthroat trout in the north fork of Greenhorn Creek (section 24). Nineteen westslope cutthroat were captured, but a reliable population estimate could not be made due to insufficient numbers of recaptured fish. A population estimate for brook trout indicated 33 fish per 1000 feet with a confidence interval of +/- 8. Of that number, 12 were in the 5.5 to 10.2 inch range and 21 were in the 4.0 to 5.4 inch range. The brook trout were in excellent condition.

In 1994, the BLM electrofished 2,000 ft of the North Fork. The number of brook trout captured was unavailable at the time of this report, but three cutthroat trout were caught and sent to the University of Montana for genetic analysis to determine the degree of westslope cutthroat purity. The results of the analysis are not yet available.

In 1992 and 1994, sections of both forks were electrofished by the Forest Service. In both cases, brook trout were the only species captured.

e. FISH HABITAT

A qualitative habitat appraisal was done on about 4.5 miles of the North Fork, and about 1 mile of the South Fork. With the exceptions of creek crossings and the 3/4 mile of stream affected by past placer mining, both stream's fisheries habitat condition ranged from good to excellent. The overhanging vegetation on the stream was so thick, population surveys and work along the stream's edge was difficult. The stream's channels were undisturbed. Small pools and riffles with lots of undercut banks contributed to the excellent rating.

The area which was placer mined has a higher width to depth ratio than the undisturbed stream channel. There is a higher sediment load in the streambed with more riffles and fewer pools. The overhead riparian willows are not present in the mined sections. The fish habitat in the riparian areas was rated as fair.

2. Environmental Consequences

a. EFFECTS COMMON TO ALL ALTERNATIVES

Use of the Willow Creek road would not affect the fisheries resource under any alternative.

In all alternatives, fisheries would only have the potential to be affected along 1.2 miles of the South Fork Greenhorn road and about 0.8 mile of the North Fork Greenhorn road.

i. Direct Effects

There would be no direct impacts to fish or fish habitat.

b. EFFECTS OF THE ALTERNATIVES

i. Indirect Effects

Alternatives 1 and 2 would leave the two creek fords on the North Fork in place. There would continue to be a little sediment introduced into the stream each time the ford was crossed. Alternative 3 would eliminate the two fords. Alternative 3, because it does away with the fords, would be better for the fisheries resource, but the overall difference in sediment between alternatives is so slight, the effects on fish would be the same for all alternatives.

ii. Cumulative Effects

The whole length of the driveable road for the north and south forks of Greenhorn creeks is the cumulative effects area. Because the amount of sediment anticipated to be introduced by any of the alternatives is very small, and not a factor, downstream of the project is not part of the cumulative effects area.

The aspects to be looked at for cumulative effects are; the number of feet of stream crossing reduced, and the effects on the fish populations as a result of improved access.

Presently, a little less than 1% (.9%) of the stream has been affected by fords. Alternatives 1 and 2 would not change this percentage. Alternative 3 would reduce the total amount of feet in fords by 30 feet, to .8%. There is very little difference in the effects on the fish or their habitat between the alternatives.

Better access would increase the number of people in the area, especially the North Fork. Most of the activity would be expected during the fall when hunters use the area.

Sport fishing for trout would be difficult, due to the dense overhanging willows that shroud most of the creek. The Montana Department of Fish, Wildlife, and Parks allow a harvest of five cutthroat and 20 brook trout per day. They encourage anglers to release cutthroat because of the fish's susceptibility to over harvesting and reduced numbers within the state. There would be no difference between alternatives in angler success for cutthroat or brook trout.

I. SENSITIVE PLANTS

A Forest Service ecologist surveyed the existing roads and the proposed new road locations. A small population of Cirsium subniveum was found along the existing road in the bottom of the South Fork Greenhorn Creek. Additional individuals would most likely be found in the general vicinity of this population. This population would not be harmed through activities considered for this project. No other Region One sensitive plant species were found in the survey. In addition, no species listed in the Montana Natural Heritage Program's latest "Plant Species of Special Concern" were found in the project area.

J. PUBLIC SAFETY

1. Affected Environment

a. ANALYSIS AREA

The analysis area consists of the existing roads as described in Alternative 1, the No Action alternative.

b. EXISTING CONDITION

Road segment 4 contains several hazards. The first 1/4 mile mixes recreational traffic with mine traffic on a steep, narrow road with poor visibility. The last 1/4 mile runs straight down a 20% slope, is deeply rutted, and is only passable to four-wheel-drive vehicles when dry.

The 500-800 feet of road segment 5 from its junction with the North Fork, crosses a wet, boggy area impassable when wet.

2. Environmental Consequences

a. ALTERNATIVE 1 - No Action

Alternative 1 would not change the existing hazards.

b. ALTERNATIVE 2 - Proposed Action

Alternative 2 would bypass road segment 4 and its inherent hazards. It would eliminate 1/4 mile of mixed traffic and 1/4 mile of impassable steep slope. It would improve the hazards associated with the bog in road segment 5.

c. ALTERNATIVE 3 - Bowman Bypass

Alternative 3 would also bypass road segment 4 and its inherent hazards. It would eliminate 1/4 mile of mixed traffic and 1/4 mile of impassable steep slope. Alternative 3 would also bypass the bog in road segment 5, eliminating this hazardous stretch.

d. EFFECTS COMMON TO ALL ALTERNATIVES

Cumulative Effects: The Gravelly/Snowcrest area contains many hazardous, low-standard roads. Improvements made in Willow and Greenhorn Creeks, when added to past, present, and reasonably foreseeable road improvements, would not have a significant effect on the human environment.

e. RECOMMENDED MITIGATION

Signs should be erected on private land instructing drivers to stay on the roadway.

K. ROADLESS

1. Affected Environment

a. ANALYSIS AREA

The north and south forks of Greenhorn Creek, within the national forest boundary, lie within the Sheep Mountain roadless area, 1-021 (Forest Plan, Appendix C, pages C-285-298).

b. EXISTING CONDITION

The area appears from the surrounding lands as a steep timber-covered range of mountain, then, when atop the mountain, it opens up into a gentle grassland with benches and slopes. Low quality roads, such as the North and South Fork Greenhorn roads, intrude into the area, used by public and private managers.

2. Environmental Consequences

None of the alternatives propose change within the Sheep Mountain roadless area. Use of the area should remain unchanged from present use. There should be no affect on the existing natural integrity and appearance, opportunities for solitude, primitive recreation opportunities, or other features from any of the actions proposed in any of the alternatives.

L. NOXIOUS WEEDS

Scattered infestations of Spotted knapweed (Centaurea maculosa), Field scabious (Knautia arvensis), Hound's tongue (Cynoglossum officinale), and Black henbane (Hyoscyamus niger) are found along the existing road right-of-way and are spreading out into the various plant communities. This is the biggest threat to this entire area. Ground disturbance during road construction increases the potential for these weed species to spread. An aggressive, coordinated weed control effort should be developed along with the planning for this road project.

With the noxious weed concern in the area, any cut and fill slopes created along the new construction would need to be revegetated. Emphasize the use of native plant species. For sections of the old road that would be abandoned, make no special revegetation efforts. The current road is just a wheel track and these sections of road would need no additional rehabilitation beyond placing a water bar or two on the steep section of road dropping off the ridge to the South Fork Greenhorn.

IV. LITERATURE CITED

Beaverhead National Forest Plan. 1986. United States Department of Agriculture, Forest Service. On file at Beaverhead National Forest Supervisor's Office, 420 Barrett St., Dillon, MT 59725

Burbridge, W.R. and D.J. Neff. 1976. Conconino National Forest-Arizona Game and Fish Department Cooperative Roads-wildlife study. In Proc. Elk-logging-roads Symp., ed. S.R. Hieb, pp44-57. Moscow: Univ. Idaho. 142pp.

Fager, C.W. 1991. Harvest Dynamics and winter habitat use of the pine marten in Southwest Montana. Job Prog. Rept. W-100-R-4. Montana State University, Bozeman MT. 73pp.

Fredlund, Lynn. 1986. Site form 24MA697. On file at the Beaverhead National Forest Supervisor's Office, 420 Barretts Dillon, MT 59725

Klebenow, D.A. 1972. The habitat requirements of sage grouse and the role of fire in management, Tall Timbers Fire Ecology Conference. 12:305-315.

M.D.F.W.P. 1992. Statewide elk management plan for Montana. Helena MT 171pp.

Ward, A.L. 1976. Elk behavior in relationship to timber harvest operations and traffic on the Medicine Bow Range in south-central Wyoming. In Proc. Elk-logging-roads symp., ed. S.R. Hieb, pp.32-43. Moscow: Univ. Idaho. 142pp.

U.S.D.A. 1989. Caring for our natural community. Region 1. 309pp.4